



Working in 3-D Sudoku

Name _____

Directions: Choose the best answer for each question. Place your numerical choice in the puzzle in the indicated row and column (A 4 means column A row 4). When finished, solve the remaining Sudoku puzzle. Every row of 9 numbers must include all digits 1 through 9 in any order, every column of 9 numbers must include all digits 1 through 9 in any order, and every 3 by 3 subsection of the 9 by 9 square must include all digits 1 through 9.

	A	B	C	D	E	F	G	H	I
1	9			4	6				3
2		6					5		2
3				3					
4									
5			1			9		5	7
6				2	3		9	1	4
7	8	1			4				
8			5					3	
9			9		5	3			8

1. The radius of a sphere is 4 feet. What is the area of the great circle of this sphere to the *nearest tenth*?

A 4

- 1) 804.2 square feet
- 2) 50.3 square feet
- 3) 50.2 square feet
- 4) 50.1 square feet

2. A cylinder and a cone each have a radius of 4 cm. and a height of 10 cm. What is the ratio of the volume of the cone to the volume of the cylinder?

F 7

- 1) 1:2
- 2) 1:3
- 3) 3:1
- 4) 2:1

G 4

3. A rectangular gift box with whole number dimensions has a volume of 36 cubic inches. What are the dimensions of the box requiring the least amount of wrapping paper to cover the box?

- 1) $2 \times 3 \times 6$ inches
- 2) $9 \times 2 \times 2$ inches
- 3) $3 \times 3 \times 4$ inches
- 4) $4 \times 9 \times 1$ inches

C 3

4. When the dimensions of the radius and height of a cylinder are tripled, the volume is:

- 1) tripled
- 2) multiplied by 8
- 3) multiplied by 9
- 4) multiplied by 27

E 4

5. A swimming pool in the shape of a rectangular prism has dimensions 26 feet long, 16 feet wide, and 6 feet deep. How much water is needed to fill the pool to 6 inches from the top?

- 1) 2288 cu.ft.
- 2) 2496 cu.ft.
- 3) 2418 cu.ft.
- 4) 2216.5 cu.ft.

B 5

6. The Great Pyramid of Giza is a right pyramid with a square base. The length of a side of the base is approximately 230 meters and the slant height of the pyramid is approximately 464 meters. To the *nearest cubic meter*, what is the volume of the Great Pyramid?

- 1) 8181867 cu.m.
- 2) 8058661 cu.m.
- 3) 7926590 cu.m.
- 4) 23778550 cu.m.

C 7

7. A right circular cylinder with a height of 8 inches and a diameter of 3 inches was designed to hold water. If the container is filled to two-thirds full with water, what is the volume of the water in the container, to the *nearest cubic inch*?

- 1) 57 cu.in.
- 2) 19 cu.in.
- 3) 38 cu.in.
- 4) 151 cu.in.

H 2

8. The number of faces in an icosahedron is

- 1) 6
- 2) 8
- 3) 12
- 4) 20